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10/666,102	09/18/2003	Stephen J. Fink	YOR920030026	7123

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EXAMINER

WANG, RONGFA PHILIP

ART UNIT	PAPER NUMBER
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2191

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/06/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/666,102

Applicant(s)

FINK ET AL.

Examiner

Philip Wang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is in response to amendment filed on 1/11/2007.
2. The objection to the specification is withdrawn in view of the Applicant's amendment to the Specification.
3. The objection to the drawing is withdrawn in view of the Applicant's submission of replacement sheets.
4. Per Applicant's request, claims 1, 16, and 23 have been amended.
5. Claims 1-30 remain pending.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claims 5, 13, 22, and 26 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The examiner believes that nowhere in the specification provides any description for such limitation. No prior art rejection will be provided for these claims. Please see examiner's response item 1 for further detail.

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2. Claims 9, 10, 11, 12, and 30 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The only location in the specification that mentions these limitations is in paragraph [0018] that only list these functions without providing any detail regarding how these functions are performed. No prior rejections will be provided for these claims.

3. Claims 1-30 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 1, 16, and 23 recite the limitation of an activation. Though the specification describes step 110 "the system associates a phase with an activation", however, it appears no description is given regarding what is an activation. Based on the examiner's understanding, an activation count is associated with a frame (per [0017], line 7-8). All depend claims of claims 1, 16, and 23 suffer the same deficiency as claims 1, 16, and 23 and are rejected for the same reason above.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Independent claims 1 and 16 recite the limitation of detecting phases in a computer program, however, the body of the claim does not include any limitation for detecting phases in a computer program. All depend claims of claims 1 and 16 suffer the same deficiency and are rejected for the same reason above.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-4, 6-8, 12, 14-21, 23-25, and 27-29 are rejected under 35 U.S.C. 102(e) as being anticipated by Houldsworth (US Patent No. 6,557,091).

As per claim 1,

Houldsworth discloses

a) allocating space in memory for an activation count for each frame (FIG. 5, HT/COUNT is memory allocated);

b) zeroing the activation count wherever the program creates a new stack frame (It is inherent when it is initialized, see for example FIG. 4 HT/COUNT, left col.);

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c) analyzing the stack for each thread and incrementing the activation count for each frame (FIG. 5, HT/COUNT shows and count of 2 after incrementing.);
and

d) associating a phase with an activation whose activation count is non-zero (FIG. 5, an SF is associated with a phase with a count of 2 which is non-zero).

As per claim 2,

the rejection of claim 1 is incorporated;

further Houldsworth discloses

- step c) further comprises logging activation counts during each interval (c3: 27-28, "...periodically determining...").

As per claim 3,

the rejection of claim 1 is incorporated;

further Houldsworth discloses

- the activation count is implemented by reserving storage in each stack frame (c6: 35-36, "...a specific table TT for each thread...").

As per claim 4,

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the rejection of claim 1 is incorporated;

further Houldsworth discloses

- performing step performing step c) at periodic intervals of time according to a system clock (c3: 27-28, "...periodically determining...").

As per claim 6,

the rejection of claim 1 is incorporated;

Houldsworth discloses

- comprising ensuring that when a phase ends, an action is performed immediately (c7: 49-51, "...As local garbage is collected at procedure exits...").

As per claim 7,

the rejection of claim 6 is incorporated;

further Houldsworth discloses

- changing the return address to force the program to call a designated procedure when the frame returns c7: 49-51, "...As local garbage is collected at procedure exits...").

As per claim 8,

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the rejection of claim 1 is incorporated;

further Houldsworth discloses

- scheduling garbage collection after each associated phase (c2: 23-25,
"...singly referenced objects may be garbage collected...").

As per claim 12,

the rejection of claim 1 is incorporated;

Houldsworth discloses

- further comprising resetting profile data at program phase transitions (c2: 29-31,
"...global flag set by...").

As per claim 14,

the rejection of claim 1 is incorporated;

Houldsworth discloses

- implementing activation counts in a side data structure (Fig. 6, where
HT/COUNT is a side data structure.).

As per claim 15,

the rejection of claim 1 is incorporated;

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Houldsworth discloses

- the activation count is implemented as an array paralleling the stack (c7, 11-13, "...could be held in an array...").

Claims 16-21 are system claims that recite the same limitation as claims 1-4, and 7 and are rejected for the same reasons above.

Claims 23-25, 27-29 computer readable medium claims recite the same limitation as claims 1-3, and 7-8 and are rejected for the same reasons above.

Response to Arguments

In the remark,

Applicant argues:

1) Per 35 USC. 112 first paragraph rejections for claims 5, 13, 22, and 26 for failing to comply with the written description requirement, the Applicant argues that the originally filed claims are part of the specification.

Examiner's response:

1) Per MPEP, 2163, 2163 [R-5] Guidelines for the Examination of Patent Applications Under the 35 U.S.C. 112, para. 1, "Written Description" Requirement, section 1, A Original Claims,

"... the issue of a lack of adequate written description may arise even for an original claim when an aspect of the claimed invention has not been described with sufficient particularity such that

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one skilled in the art would recognize that the applicant had possession of the claimed invention."

The examiner considers claims 5, 13, 22, and 26 are lack of adequate written description as required set forth in MEMP section 2163.

Claims 5, 22, and 26 recite the limitation of

"... incrementing the activation count by the number of frames."

However, on page 4, line 10 of the specification discloses

"...incrementing the activation counter for each frame in the stack."

It is clear that what is being claimed in the claims is different from what is being disclosed in the specification; therefore the claimed invention has not been described with sufficient particularity such that one skilled in the art would recognize that the applicant had possession of the claimed invention.

Claim 13 recites the limitation that "the activation count is represented by a single bit, representing or absence of a running phase." According to [0017], the activation count is number of times an interval has expired. If the activation count is one bit, the maximum number an interval can expire is one. The activation count is not used to represent the presence or absence of the running phase according to the Applicant's specification; therefore the claimed invention has not been described with sufficient particularity such that one skilled in the art would recognize that the applicant had possession of the claimed invention.

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For reasons above, the examiner maintain the original rejections.

Applicant argues:

2) Regarding claim rejections under 35 USC § 112, Applicant argues the claim limitations are well known in the art by citing various references.

Examiner's response:

2) Upon review of those references cited by the Applicant, the examiner has the following findings:

Claim 9, 30 -- US Patent No. 7,155,600 col. 1, lines 43-44, disclose "...managing multiple thread via hardware state switch from execution of one thread to execution of another thread." It does not disclose the limitation of claim 9, "...Scheduling thread switches at phase boundaries." There is no mentioning of scheduling thread switches or phase boundaries at all.

Claim 10, US Patent No. 6,993,458, col. 1, line 60, "Minimizing Completion Time of a Program by Checkpointing and Rejuvenation". It mentions "checkpointing", however, it does not disclose scheduling checkpoint operations after each associated phase; US Patent NO. 6,666,304, col. 30, lines 19-21, there is no such column in this patent, further more, this patent is related to a mechanical brake system.

Claim 12, US Patent No. 6,029,004, the examiner can not find, in this patent, support for the limitation of "resetting profile data at program phase transitions". The whole patent does not even contain the key words "phase" or "transitions".

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Claim 11, US Patent No. 7,027,051 col. 12, lines 31-33, "... a flowchart illustrating visualization of system resource utilization..." It is for visualization of resource utilization, not visualization of the program behavior as claimed.

Claims 1-30, Activation Counter – US Patent No. 6,049,767, col. 5, line 39, "...the activation counter is incremented.." The examiner wants to point out that the activation counter here is used for evaluating probability models (col. 1, line2 15-16). It appears it is a variable in a mathematical formula. It is not related subject matter under discussion here.

For reasons set forth above, the examiner maintains the 35 USC § 112 rejections.

Applicant argues:

3) Per 35 USC § 112 rejections, on page 13 of the remark, Applicant states "The term "activation count" is a known term and an activation count represents the number of time an application program has been activated".

Examiner's response:

3) It appears the Applicant takes the definition of "activation count" from US Patent No. 7,050,190. It appears that the specification does not have support for such definition. Please also note that the Applicant previously defines "activation counter" (per US Patent No. 6,049,767, col. 5, line 39) as some variable in a probability models. Therefore, Applicant's subsequent arguments based the above definition of is considered moot.

Conclusion

THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

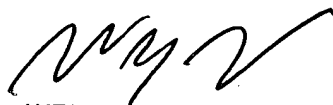
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip Wang whose telephone number is 571-272-5934. The examiner can normally be reached on Mon - Fri 8:00 - 4:00PM. Any inquiry of general nature or relating to the status of this application should be directed to the TC2100 Group receptionist: 571-272-2100.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wei Zhen can be reached on 571-272-3708. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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